Short Communication

Araschnia levana larvae (Nymphalidae) do not accept *Humulus lupulus* (Cannabaceae) as food plant

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The Palaearctic nymphalid genus *Araschnia* comprises about seven species, with highest diversity occurring in China. Life-histories of the transpalaearctic *A. levana* (Linnaeus, 1758) and the East Asian *A. burejana* Bremer, 1861 are relatively well known. Almost all published data (e.g. Ebert & Rennwald 1991, Fukuda *et al.* 1992, Tuzov *et al.* 2000, Gorbunov 2001) indicate that both are restricted to host plants in the family Urticaceae (*Urtica, Boehmeria, Laportea*). Also in a comparative experimental approach Janz *et al.* (2001) failed to observe any food acceptance of European *A. levana* beyond its usual hostplant, stinging nettle *Urtica dioica* L. In their feeding trials, Janz *et al.* incorporated exemplar species of all plant families known to be utilized as hosts among Nymphalini butterflies, including wild hop *Humulus lupulus* L. (Cannabaceae). The Cannabaceae are generally accepted as being closely related to the Urticaceae and Ulmaceae (APG 1998, Bhattacharyya & Johri 1998), two typical hostplant families of Nymphalini butterflies. Indeed, feeding on *H. lupulus* has been recorded rather widely in the Nymphalini genera *Inachis*, *Aglais*, *Polygonia* and *Nymphalis* (Janz *et al.* 2001).

In a Russian source (Korshunov & Gorbunov 1995) it is indicated that *A. levana* 'rarely' feeds on *H. lupulus*, although no details are recorded there. Despite the negative results obtained by Janz *et al.* (2001) this stimulated us to again test whether larvae of *A. levana* might accept that plant at least in captivity. In contrast to Janz *et al.* who tested each food plant in their study with only five first instar larvae, we attempted to obtain larger samples and confronted a wider range of larval stages in no-choice tests with cut young foliage of *H. lupulus*. The larvae used in the tests originated from the offspring of a number of field-collected mated females of the summer generation that had been sampled in the vicinity of Bayreuth (Northern Bavaria, Germany). Larvae were maintained in closed plastic containers (volume 1000cm^3) lined with moist filter paper and kept at room temperature (22–25°C).

In no case did we observe any signs of feeding on *H. lupulus*. This was true for first instars directly hatching from the egg with no prior feeding experience (N>100), as well as for first (N=30), second (N=15) and third instar larvae (N=15) that had been raised previously on *U. dioica* foliage. All larvae starved to death within 3–5 days. Frequently, the larvae were seen crawling around in the containers off the plant in search for suitable food.

Our complete failure to induce feeding by *A. levana* larvae on *H. lupulus* indicates that in fact this plant species does not qualify as a food plant. It is at present impossible

to decide where the discrepancy to Korshunov & Gorbunov's record (1995) comes from. It might still be possible that certain Siberian populations of *A. levana* do have the capacity to feed on *H. lupulus*. However, it seems remarkable in this respect that in his recent book Gorbunov (2001) no longer mentions any relationship between *A. levana* and *H. lupulus*. Hence, for the time being and until any conclusive data can be presented to show the contrary, we suggest to delete *Humulus* from the hostplant list of *Araschnia* butterflies, which appear in fact to be family-monophagous on Urticaceae.

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